June 14, 1949. W. H. BORN 2,473,327

IMPLEMENT FOR WINDING AND FOLDING HARVESTING SHEETS

Filed March 20, 1945 3 Sheets-Sheet 1

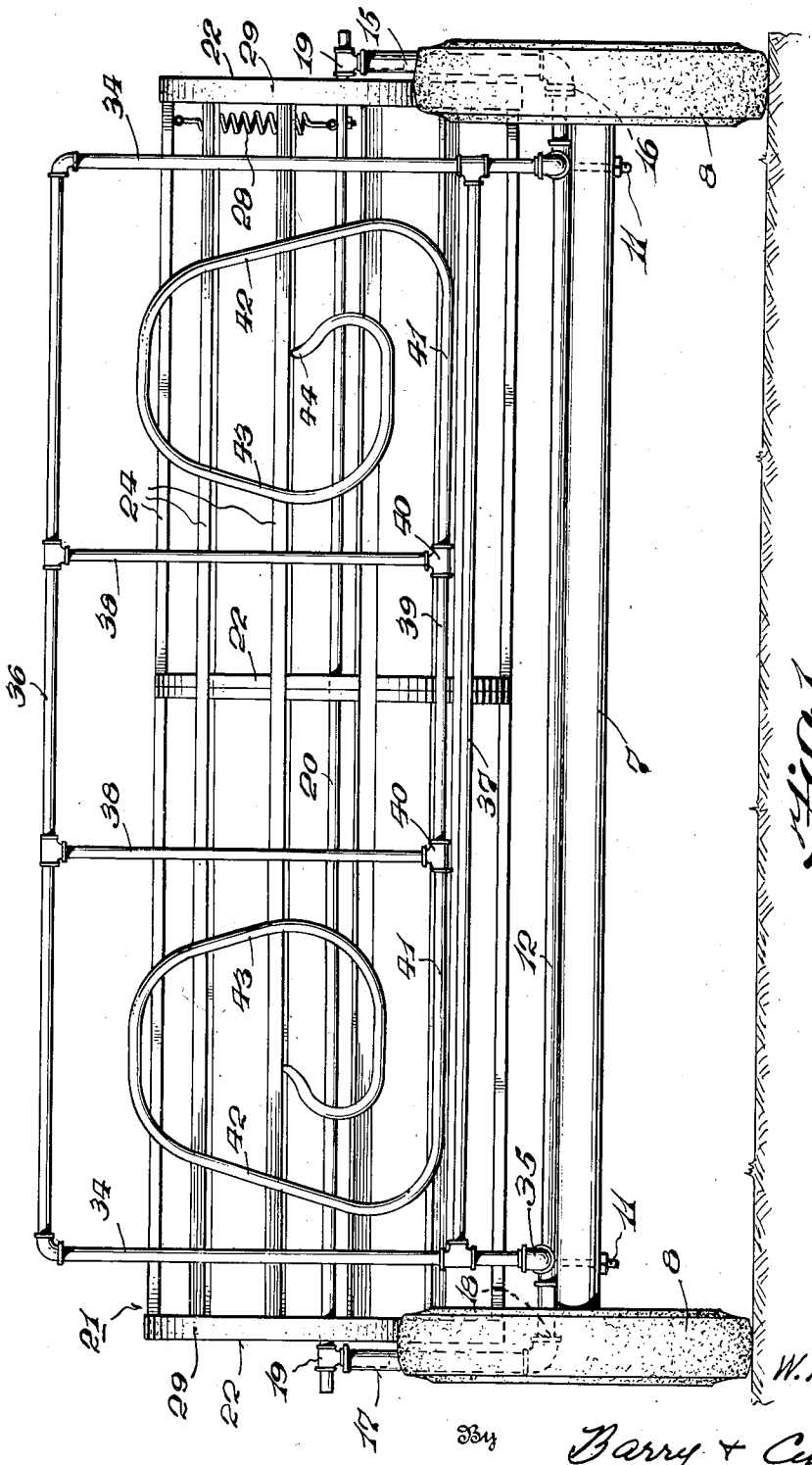


Fig. 1

Inventor
W. H. Born,
By Barry & Cye
Attorneys

June 14, 1949. W. H. BORN 2,473,327

IMPLEMENT FOR WINDING AND FOLDING HARVESTING SHEETS

Filed March 20, 1945 3 Sheets-Sheet 2

Fig. 3

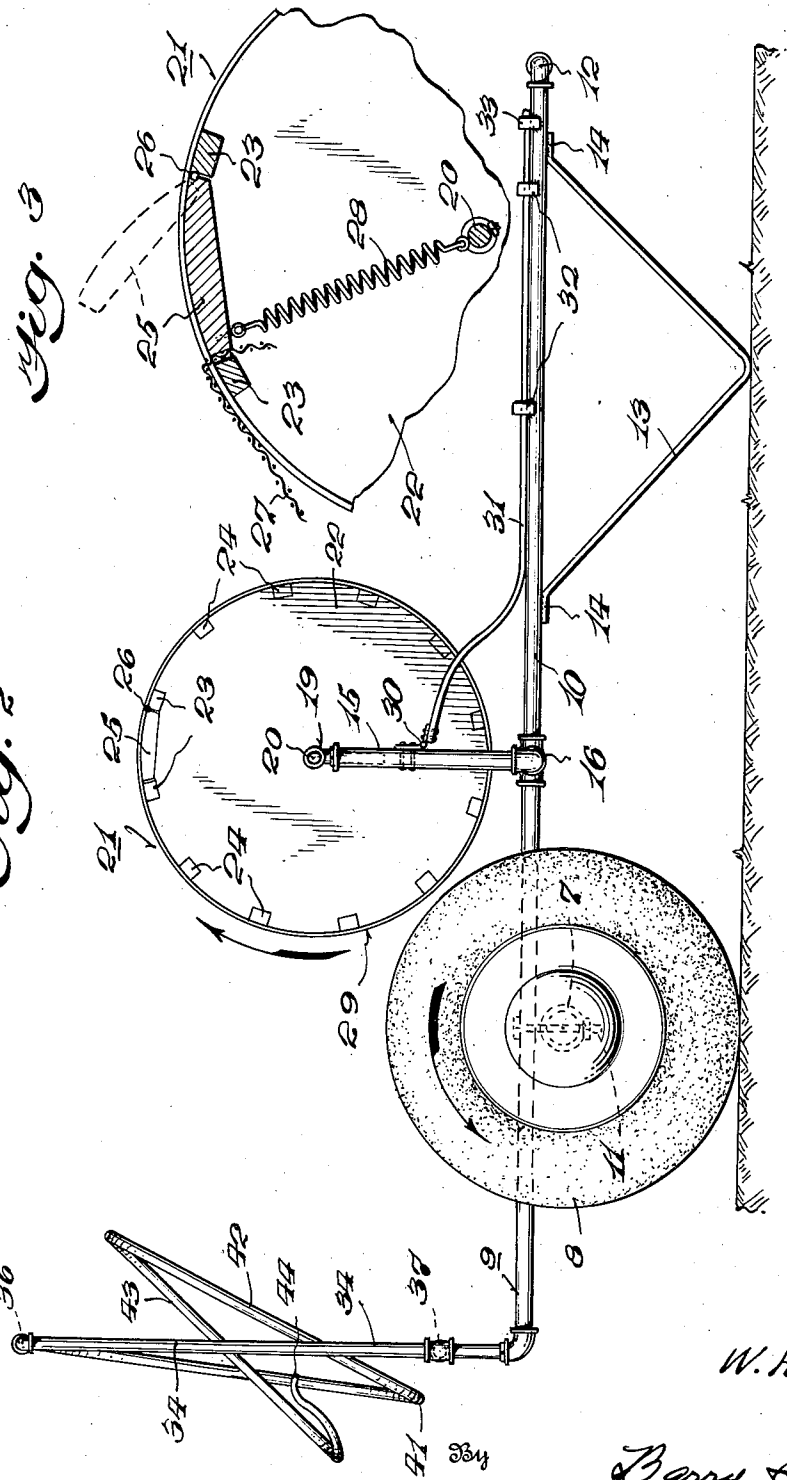


Fig. 2

Inventor
W. H. Born,

By Barry & Cyr
Attorneys

June 14, 1949. W. H. BORN 2,473,327

IMPLEMENT FOR WINDING AND FOLDING HARVESTING SHEETS

Filed March 20, 1945

3 Sheets-Sheet 3

Fig. 4

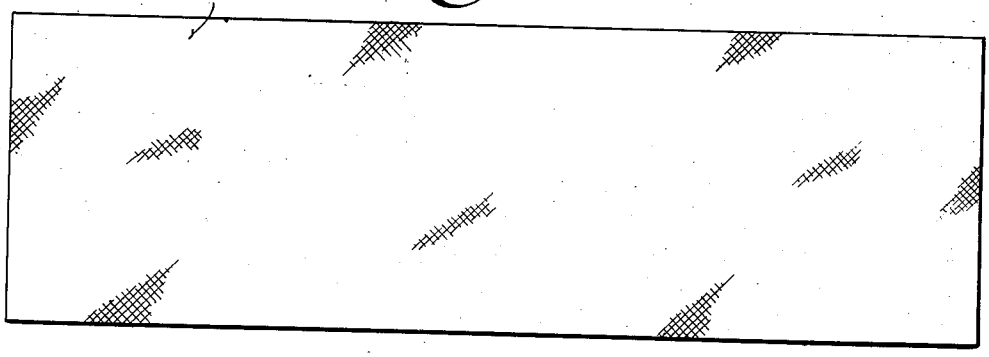


Fig. 5

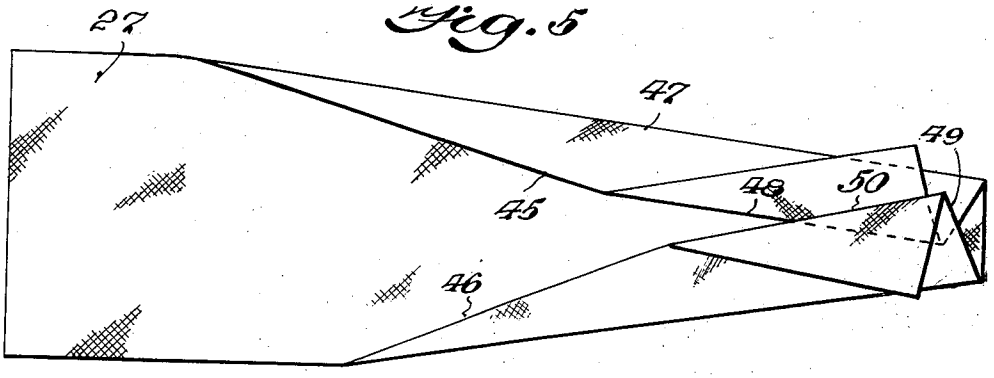
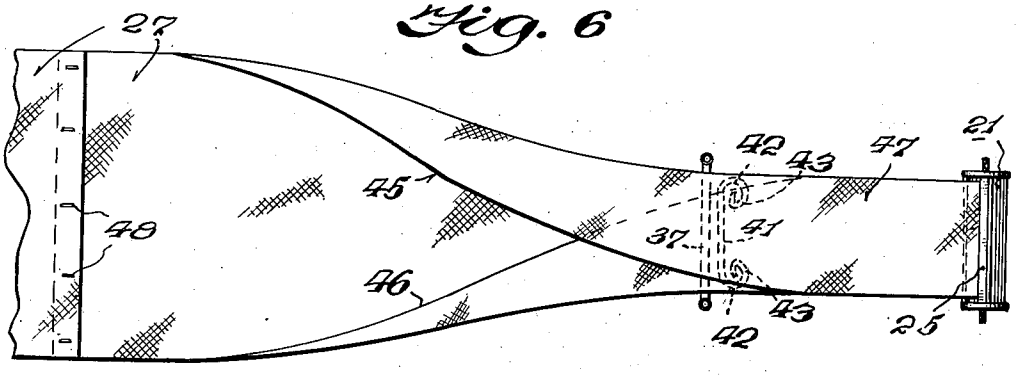


Fig. 6



Inventor

W. H. Born,

By Barry & Cyr

Attorneys

Patented June 14, 1949

2,473,327

UNITED STATES PATENT OFFICE

2,473,327

IMPLEMENT FOR WINDING AND FOLDING HARVESTING SHEETS

Wade H. Born, McRae, Ga.

Application March 20, 1945, Serial No. 583,799

3 Claims. (Cl. 56—329)

1

This invention relates to improvements in harvesting implements for nuts or the like and more particularly to a sheet handling device for winding and folding a sheet on which nuts from a tree or trees have fallen. In accordance with the invention a sheet of any suitable size after having been placed on the ground beneath a tree and receiving nuts from the latter may be simultaneously wound on a reel and folded lengthwise so as to deposit the nuts or the like along the central portion of the upper surface of the sheet whereby the nuts so gathered may be transferred to a smaller sheet and then transported to a place of storage or the like.

The primary object of the invention is to provide an implement that may be readily handled by a single operator while winding and folding the sheet or while unwinding and unfolding the sheet.

Another object of the invention is to furnish a sheet handling device designed to wind and fold a sheet and involving a simple and inexpensive mechanism including a reel designed to be driven by one of the supporting wheels of the device, and guides for folding the sheet longitudinally while it is wound on the wheel. With the foregoing objects outlined and with other objects in view which will appear as the description proceeds, the invention consists in the novel features hereinafter described in detail, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims.

In the drawings

Fig. 1 is a front elevation of my improved sheet handling implement,

Fig. 2 is a side elevation of the same,

Fig. 3 is a detail sectional view of a portion of the reel and illustrating the manner of securing an end of a sheet to the periphery of the wheel,

Fig. 4 is a top plan view of a sheet shaped to be handled by the implement,

Fig. 5 is a similar view of the sheet after its side edges have been folded to facilitate attaching the sheet to the reel,

Fig. 6 is a similar view with the folded end of the sheet secured to the reel and diagrammatically illustrating the means for folding the sheet as it is wound.

Referring to Figs. 1 to 3, inclusive, 7 designates a stationary axle on which a pair of supporting wheels 8 are mounted, each preferably provided with a rubber tire. A frame or chassis 9 is mounted on the axle in any suitable way and may consist of parallel side bars 10 rigidly secured to the end portions of the axle by bolts 11

2

or the like. At one end of the frame, the side bars are secured together by a horizontal cross bar 12 serving as a handle by which the implement may be pushed or pulled. An angle shaped support 13 for the frame depends from one of the side bars and has its ends 14 rigidly secured to such bar.

Intermediate the ends of one of the side bars, a post 15 extends upwardly therefrom and has its lower end pivotally connected to the bar as indicated at 16. At the opposite side of the machine, another post 17 extends upwardly from the opposite side bar and is rigidly secured thereto as indicated at 18. The posts terminate at their upper ends in journals or bearings 19 for a rotatable shaft 20 of a reel 21. The latter may consist of circular members 22 having peripheral notches 23 receiving longitudinal bars 24 rigidly secured thereto. As shown in Fig. 3, a trap door or fastening device 25 has one of its side edge portions hingedly connected to one of the bars 24 as indicated at 26. Its opposite side edge portion serves to clamp a folded end of a sheet 27 against another one of the bars 24, and the trap door is yieldingly held in closed or clamped position by means of a coil spring 28 having one of its ends secured to the free edge portion of the trap door and its opposite end secured to the reel shaft 20.

The reel is adapted to be driven by one of the ground wheels, and, as shown in Figs. 1 and 2, an end of the reel may be provided with a friction band 29 adapted to contact a wheel tire. To facilitate such contact, the pivoted post 15 is hingedly connected at 30 to a link 31 guided by guide members 32 secured to one of the side bars of the chassis. The link terminates in a handle 33 which may be pushed toward one of the ground wheels or pulled in the opposite direction. The bearings for the reel shaft are constructed to permit some play so that the moving of one end of the reel into contact with the ground wheel will not be interfered with by the stationary reel supporting post 17.

At the front of the machine, posts 34 are rigidly connected to the front ends of the side bars of the chassis as indicated at 35 and these posts are rigidly connected together by a transverse top bar 36 and a transverse lower bar 37. Spaced pipes 38 are arranged between the sides of the vehicle and have their upper ends rigidly connected to the transverse bar 36. The pipes 38 are rigidly connected to a pipe 39 by T-shaped joints 40. Each of these joints rigidly supports a guide consisting of a horizontal portion 41 merging with an up-

wardly and inwardly extending portion 42 which in turn merges with a downwardly and outwardly extending portion 43 terminating in a substantially horizontal terminal 44 (Fig. 2). Each of these guides is positioned between one of the posts 34 and one of the pipes 38 and each guide is coiled opposite to the other so as to fold the sheet as the latter is wound on the reel. These guide members for folding the lateral edges of the sheet are generally spiral-shaped and are each arranged above the guide bar 37 and in substantially the same plane as the bar 37.

Referring now to the sheet 27 shown in Figs. 4 to 6, inclusive, it will be noted that such sheet may be made of canvas or the like and may be 30 x 60 feet. After nuts or the like shaken from a tree have been deposited on the sheet, one side edge 45 of one end portion is folded toward the opposite side edge 46 along fold line 47, and then reversely along line 48. Then the opposite edge portion 46 is folded over the previously folded edge portion as indicated at 49, and finally reversely folded along line 50. When this is done the folded end of the sheet is threaded over the bar 37 at an end of the chassis and attached to the reel by means of the trap door, as indicated in Fig. 3. When this is accomplished, the opposite side edge portions of the sheet are folded upwardly and wound about the guides 41—44 so as to bring the side edge portions of the sheet over the terminals 44 of the guides. When this is done, the handle 33 may be manipulated to contact the friction band 29 of the reel with the periphery of one of the wheels 8. Then if the implement is pushed toward the unfolded end of the sheet, it is evident that the sheet will be folded on the reel, and at the same time the guides will cause the opposite edge portions of the sheet to fold as indicated at 47 in Fig. 6. As the implement folds the sheet, it will be evident that the nuts or the like resting on the same will be rolled toward the longitudinal center of the unfolded portion of the sheet and toward the unfolded end of the latter. Where it is desired to use a longer sheet, the sheet may be made in sections and the ends thereof can be connected by any suitable means such as indicated at 48. After the single sheet or sectional sheet has been wound to a desired extent on the reel, the nuts so gathered can be transferred to a smaller sheet (8' x 8', for example) and then transferred to a place of storage or the like. Afterwards, the handle 33 may be pulled toward the operator so as to release the reel from contact with the driving ground wheel, and if at this time the implement is pulled in the opposite direction, the sheet will be unwound and can then be detached from the reel. After unwinding, the operator can grasp the side edge portions of the sheet so as to stretch the same out on the surface of the ground.

From the foregoing it is believed that the construction, operation and advantages of the invention may be readily understood and I am aware that changes may be made in the details disclosed without departing from the spirit of the invention as expressed in the following claims.

What I claim and desire to be secured by Letters Patent is:

1. Apparatus for folding and winding a harvesting sheet comprising, a chassis frame, wheels supporting said chassis frame for rolling movement, a reel arranged transversely of the chassis frame, means supporting said reel for rotation on the chassis frame, means for securing the harvesting sheet to the periphery of said reel, a sheet folding guide member carried by said chassis frame including a horizontal portion and the vertical portion extending upwardly from the horizontal portion and merging with a downwardly extending portion which terminates in a tip portion, a second sheet folding guide member carried by the chassis frame including a horizontal portion and an upwardly extending portion merging with a downwardly extending portion which terminates in a tip portion, and said guide members being spaced forwardly of the reel for elevating and folding the lateral edges of the sheet to prevent escape of articles being harvested as the sheet is wound onto the reel.

2. Apparatus for collecting articles on a flexible sheet comprising, a chassis frame, means supporting said chassis frame for movement along the ground, a reel arranged transversely of the chassis frame, means supporting said reel for rotation, means for securing the flexible sheet to the periphery of said reel, a guide bar arranged transversely of the chassis frame and spaced from said reel, a generally spiral-shaped guide member carried by the chassis frame above said guide bar, and a second generally spiral-shaped guide member carried by the chassis frame above said guide bar and spiralling in a direction opposite from the first guide member whereby the lateral edges of the flexible sheet are elevated and folded as the sheet is wound onto the reel.

3. In harvesting apparatus, a chassis frame, means supporting said chassis frame for movement along the ground, a reel arranged transversely of the chassis frame, means supporting said reel for rotation, means for securing a flexible harvesting sheet to the periphery of said reel, a sheet guide bar arranged transversely of the chassis frame and spaced from the reel, a generally spiral-shaped guide member carried by the chassis frame for elevating and folding one lateral edge of the harvesting sheet as the sheet passes over said guide bar, and a second generally spiral-shaped guide member carried by the chassis frame for elevating and folding the other lateral edge of the flexible harvesting sheet as the sheet passes over said guide bar.

WADE H. BORN.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
124,968	Mochcowitz	Mar. 26, 1872
229,447	Moorefield	June 29, 1880
557,341	Pollock	May 31, 1896
618,602	Davis	Jan. 31, 1899
987,593	O'Maley	Mar. 21, 1911
1,046,193	Julyan	Dec. 3, 1912
1,144,840	Hageness	June 29, 1915
1,957,994	Eccher	May 8, 1934